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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,599	11/16/2001	Shinji Uebayashi	3815/143	4705

22913 7590 08/19/2005

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EXAMINER	
SHAH, CHIRAG G	
ART UNIT	**PAPER NUMBER**
2664	

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/998,599	UEBAYASHI ET AL.	
	Examiner	Art Unit	
	Chirag G. Shah	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 11, 12, and 14-27* is/are rejected.

7)☒ Claim(s) *2-10 and 13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1 sheet*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-27 examined on the merit.

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1, 11, 12, 15, 20-22, and 25-27 rejected under 35 U.S.C. 102(a) as being anticipated by Schulz (DE 19830841 A1).

Regarding claim 1, Schulz discloses in **fig. 3** of a communication **[universal mobile telecommunication system standard with an FDD mode or a TDD mode, see fig. 3 and col. 4, line 1]** method comprising:

a FDD reception step for receiving a signal *(control channel with oi1, oi2, oi3, oi4)* based on an FDD *(FS1)* method **[the mobile station (MS) receives organization information (signal) oi1, oi2, oi3, oi4 etc., in a control channel via a first radio interface FS1 (FS1 uses UMTS FDD Mode, see fig. 3) sent by the base stations, see col. 4, lines 12-21, 43-56 and claim 1]**;

a first acquisition step for acquiring information of a signal based on a TDD method from the received signal based on the FDD method **[the MS receives/acquires organization information oi4 (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel respectively for interface FS2 (TDD mode, fig. 3) from the received signal based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56 and claim 1]** and

a first TDD reception step for receiving the signal based on the TDD method **[as disclosed in col. 5, lines 37-48, the mobile station establishes and receives connection signal with 144kbits/s data service via the radio FS2** ***(FS2 operates in the TDD mode, see fig. 3)***] on the basis of the acquired information of the signal based on the TDD method [***the MS acquires TDD mode information via control channel containing oi4 organizational information from the received signal via FS1-FDD mode as disclosed in col. 4, lines 12-21, 43-56;*** **the MS evaluates the organization information received oi1,oi2, oi3, oi4 in the control channel sent by the BS and informs the BS of the radio interfaces FS1-FS7 that are being supported (Note: FS2-TDD mode, fig. 3), the support/signing on of FS2-TDD mode radio interface based on the received organization information provides the basis for receiving signal based on TDD method, see col. 5, lines 28-48]** as claim.

Regarding claim 15, Schulz discloses in **fig.** 3 of a communication **[universal mobile telecommunication system standard with an FDD mode or a TDD mode, see fig. 3 and col. 4, line 1]** method comprising:

a step for including information of a signal based on a TDD method in a signal based on an FDD method **[the BS sends organization information oi4 signal (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56 and claim 1]** and

an FDD transmission step for transmitting the signal based on the FDD method **[the base station (BS) sends organization information oi1, oi2, oi3, oi4 etc., in a control channel via a first radio interface FS1 (FS1 uses UMTS FDD Mode, see fig. 3), see col. 4, lines 12-21, 43-56 and claim 1]** as claim.

Regarding claim 25, Schulz discloses in **fig. 3** of a communication **[universal mobile telecommunication system standard with an FDD mode or a TDD mode, see fig. 3 and col. 4, line 1]** method comprising:

a step for including, at a base station, information of a signal based on a TDD method in a signal based on an FDD method **[the BS sends organization information oi4 signal (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56, and claim 1]**;

a step for transmitting the signal based on the FDD method from the base station to a mobile station **[the base station (BS) sends to the mobile station organization information oi1, oi2, oi3, oi4 etc., in a control channel via a first radio interface FS1 (FS1 uses UMTS FDD Mode, see fig. 3), see col. 4, lines 12-21, 43-56 and claim 1]**;

a step for acquiring the information of the signal based on the TDD method from the received signal based on the FDD method **[the MS receives/acquires organization information oi4 (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel respectively for interface FS2 (TDD mode, fig. 3) from the received signal based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56, and claim 1]**; and

a step for receiving the signal based on the TDD method **[as disclosed in col. 5, lines 37-48, the mobile station establishes and receives connection signal with 144kbits/s data service via the radio FS2** ***(FS2 operates in the TDD mode, see fig. 3)***] on the basis of the acquired information of the signal based on the TDD method ***[the MS acquires TDD mode information via control channel containing oi4 organizational information from the received signal via FS1-FDD mode as disclosed in col. 4, lines 12-21, 43-56;*** **the MS evaluates the organization information received oi1,oi2, oi3, oi4 in the control channel sent by the BS and informs the BS of the radio interfaces FS1-FS7 that are being supported (Note: FS2-TDD mode, fig. 3), the support/signing on of FS2-TDD mode radio interface based on the received organization information provides the basis for receiving signal based on TDD method, see col. 5, lines 28-48]** as claim.

Regarding claim 26, Schulz discloses a mobile station of **fig. 2** comprising:

FDD reception means [mobile station has a receiver] for receiving a signal based on an FDD method **[the mobile station (MS) receives organization information oi1, oi2, oi3, oi4 etc., in a control channel via a first radio interface FS1 (FS1 uses UMTS FDD Mode, see fig. 3) sent by the base stations, see col. 4, lines 12-21, 43-56 and claim 1]**;

acquisition means for acquiring information of a signal based on a TDD method from the received signal based on the FDD method **[the MS receives/acquires organization information oi4 (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel respectively for interface FS2 (TDD mode, fig. 3) from the received signal based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56 and claim 1]**; and

TDD reception means [mobile station includes a receiver] for receiving the signal based on the TDD method **[as disclosed in col. 5, lines 37-48, the mobile station establishes and receives connection signal with 144kbits/s data service via the radio FS2** ***(FS2 operates in the TDD mode, see fig. 3)***] on the basis of the acquired information of the signal based on the TDD method **[*the MS acquires TDD mode information via control channel containing oi4 organizational information from the received signal via FS1-FDD mode as disclosed in col. 4, lines 12-21, 43-56;* the MS evaluates the organization information received oi1,oi2, oi3, oi4 in the control channel sent by the BS and informs the BS of the radio interfaces FS1-FS7 that are being supported (Note: FS2-TDD mode, fig. 3), the support/signing on of FS2-TDD mode radio interface based on the received organization information provides the basis for receiving signal based on TDD method, see col. 5, lines 28-48]** as claim.

Regarding claim 27, Schulz discloses a base station of **fig. 2** comprising:

Means [BS transmits a signal via a control channel, see col. 4, lines 12-21 and claim 1] for including information of a signal based on a TDD method in a signal based on an FDD method **[the BS sends organization information oi4 (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel (signal) respectively to radio interface**

FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56 and claim 1]; and

FDD transmission means [BS includes a transmitter for transmitting a control channel (signal), see fig. 2] for transmitting the signal based on the FDD method **[the base station (BS) sends organization information oi1, oi2, oi3, oi4 etc., in a control channel (signal) via a first radio interface FS1 (FS1 uses UMTS FDD Mode, see fig. 3), see col. 4, lines 12-21, 43-56 and claim 1**] as claim.

Regarding claim 11, Schulz disclose wherein the first acquisition step acquires information of a communication channel based on the TDD method from the received signal based on the FDD method **[the mobile station acquires oi4 organization information within a control channel from the received signal transmitted from the BS based on FS1-FDD mode, see col. 4, lines 12-21, 43-56 and claim 1]** and the first TDD reception step receives the communication channel on the basis of the acquired information of the communication channel **[the MS acquires/receives the TDD mode information on the basis of the acquired/via control channel containing organization information from the received signal via FS1-TDD mode as disclosed in col. 4, lines 12-21, 43-56 and claim 1]** as claim.

Regarding claim 12, Schulz discloses wherein the information **[oi1, oi2, oi3, see col. 4, lines 12-21]** of the communication channel **[oi1, oi2, etc... within a control channel, see col. 4, lines 12-21 and claim 1]**, include information relating to at least of a frequency [**see fig. 4, where oi1to oi4 provide frequency information**] as claim.

Regarding claim 20, Schulz discloses wherein the information of the signal **[oi4 within the control channel, see fig. 4, claim 1, col. 4, lines 12-21 and 43-56]** based on the TDD method **[oi4 operates under TDD mode, see fig. 4]** includes information of a communication channel **[frequency channel information is within the oi4 information, see fig. 4; oi4 operates in TDD mode, see fig. 4]** based on the TDD method.

Regarding claim 21, Schulz discloses wherein the information **[oi1, oi2, oi3, see col. 4, lines 12-21]** of the communication channel **[oi1, oi2, etc... within a control channel, see col. 4, lines 12-21 and claim 1]**, include information relating to at least of a frequency **[see fig. 4, where oi1to oi4 provide frequency information]** as claim.

Regarding claim 22, Schulz discloses wherein the communication method further comprises a TDD transmission step for transmitting the signal based on the TDD method and the signal based on the TDD method includes a signal of a communication channel **[as disclosed in col. 5, lines 37-48, the base station establishes/transmits connection signal with 144kbits/s data service via the radio FS2 channel *(FS2 operates in the TDD mode, see fig. 3)*]]** but does not include a signal of a synchronization channel and a signal of a common control channel **[the organization information oi1-oi4 does not include SCH or CCCH information]**.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 14 and 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz in view of Miya et al. (U.S. Patent No. 6,351,458), hereinafter referred as Miya.

Regarding claim 14, Schulz discloses in col. 4, lines 1-8 of radio communication system having an FDD and a TDD mode and that the FS7 interface radio supports CDMA transmission. *Schulz is silent to wherein the TDD method is a CDMA-TDD method and the FDD method is a CDMA-FDD method.* Miya discloses in col. 6, lines 36-41 of a CDMA cellular wireless communication system, which can operate both FDD and TDD for transmission and reception of communication signals. Therefore, it would have been obvious to one of ordinary skills in the art to include the features of both FDD and TDD modes supporting CDMA communication technology as taught by Miya. One is motivated as such in order to provide reduced interference, allowing enhanced communication quality *(Miya, col. 6, lines 35-41).*

Regarding claim 24, Schulz discloses in col. 4, lines 1-8 of radio communication system having an FDD and a TDD mode and that the FS7 interface radio supports CDMA transmission. *Schulz is silent to wherein the TDD method is a CDMA-TDD method and the FDD method is a CDMA-FDD method.* Miya discloses in col. 6, lines 36-41 of a CDMA cellular wireless

communication system, which can operate both FDD and TDD for transmission and reception of communication signals. Therefore, it would have been obvious to one of ordinary skills in the art to include the features of both FDD and TDD modes supporting CDMA communication technology as taught by Miya. One is motivated as such in order to provide reduced interference, allowing enhanced communication quality *(Miya, col. 6, lines 35-41)*.

6. Claims 16-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz in view of Vialen et al. (U.S. Patent No. 6,882,727), hereinafter referred as Vialen.

Regarding claim 16, Schulz discloses of that the BS sends organization information oi4 (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel (signal) respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56, and claim 1. *Schulz fails to disclose wherein the information of the signal includes information of a synchronization channel based on the TDD method.* Vialen teaches in col. 7, lines 41-45 of using physical layer transport control channels in FDD and TDD modes. Vialen discloses in col. 7, lines 45-55 and col. 8, lines 5-10 of utilizing an SCH down-link channel for broadcasting synchronization information to several user equipments in the TDD mode. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include the features of the downlink signal having SCH channel based on TDD as taught by Vialen. One is motivated as such in order to provide handover control message including timing, synchronization and paging to the user equipment *(Vialen, col. 4, lines 16-20)*.

Regarding claim 17, Schulz discloses all the limitations of claim 15. *Schulz fails to explicitly disclose wherein the information of the synchronization channel includes information relating to at least one of a code, a frequency and timing of the synchronization channel.* Vialen discloses in col. 7, lines 45-62 wherein the information of the synchronization channel [SCH physical transport channel] includes information relating to at least one of a code, a frequency and a timing of the synchronization channel for TDD mode. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include the features of the downlink signal having SCH channel based on TDD as taught by Vialen. One is motivated as such in order to provide handover control message including timing and synchronization to the user equipment *(Vialen, col. 4, lines 16-20).*

Regarding claim 18, Schulz discloses of that the BS sends organization information oi4 (oi4 includes signaling information on UMTS TDD mode, see, fig. 4) in a control channel (signal) respectively to radio interface FS2 (TDD mode, fig. 3) based on FS1-FDD Mode, see col. 4, lines 12-21, 43-56, and claim 1. *Schulz fails to disclose wherein the information of the signal includes information of a common control channel based on the TDD method.* Vialen teaches in col. 7, lines 41-45 of using physical layer transport control channels in FDD and TDD modes. Vialen discloses in col. 8, lines 25-34 of utilizing a CCCH (common control channel) bi-directional channel for transmitting control information between network and to several user equipments in the possible TDD mode. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include

the features of the bi-directional signal having CCCH channel based on TDD as taught by Vialen. One is motivated as such in order to provide handover control message including timing, synchronization between the network and the user equipments *(Vialen, col. 4, lines 16-20)*.

Regarding claim 19, Schulz discloses all the limitations of claim 15. Schulz fails to explicitly disclose wherein the information of the common control channel includes information relating to at least one of a code, a frequency and a timing of the common control channel. Vialen discloses in col. 8, lines 25-34 a CCCH is transport bi-directional channel for transmitting control information between the network and the user equipments. Since CCCH is a transport control channel based on col. 7, lines 45-62, the information of the common control channel [CCCH physical transport channel] can thus include information relating to at least one of a code, a frequency and a timing of the synchronization channel for TDD mode. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include the features of the downlink bi-directional signal having CCCH channel based on TDD as taught by Vialen. One is motivated as such in order to provide handover control message including timing and synchronization to the user equipment *(Vialen, col. 4, lines 16-20)*.

7. Claim 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz in view of Hwang et al. (U.S. Patent No. 6,791,963), hereinafter referred as Hwang.

Regarding claim 23, Schulz discloses in col. 5, lines 37-48 wherein the communication method further comprises a TDD transmission step for transmitting the signal [144kbit/s data service] between base station and mobile station based on the TDD method. Schulz fails to disclose *the signal based on the TDD method includes a signal of a communication channel and both or one of a signal of a synchronization channel and a signal of a common control channel.*

Hwang teaches in col. 3, lines 57-58 of peer to peer communication between mobile station and a network. Hwang discloses in col. 3, lines 57-65 and fig. 2 that the transferring of communication data between mobile station and a base station is accomplished through logical channels that are synchronization control channels (SCCH), BCCH, PCCH and common control channel (CCCH) and based on a TDD method. Furthermore, as illustrated in fig. 2, and disclosed col. 3, lines 65 to col. 4, lines 20 that service data is transferred using a dedicated control channel DCCH. This establishes that logical control channels such as SCCH, CCCH along with data is transferred between a mobile station and a network. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Schulz to include logical control channels passing data and control information as taught by Hwang. One is motivated as such in order to provide signaling and controlling support for different formats of service data units for successively coupling mobile station to the network *(Hwang, col. 3, lines 1-14).*

Allowable Subject Matter

8. Claims 2-10, and 13 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 2, prior art fails to disclose a second and third acquisition steps for acquiring information of a code of a common control channel based on the TDD method from the received synchronization channel and second and third TDD reception steps for receiving the common control channel on the basis of the identified code of the common control channel in combination with other limitation set forth in the respective claim.

Regarding claim 7, prior art fails to disclose a second acquisition steps for acquiring information of a code of a common control channel based on the TDD method from the received common control channel and a second TDD reception step for receiving the common control channel on the basis of the identified code of the common control channel in combination with other limitation set forth in the respective claim.

Regarding claim 13, prior art fails to disclose the timing of the communication channel includes the information relating to a position of a signal of the communication channel within a frame of the signal based on the TDD method and information relating to a timing offset between the signal based on the TDD method and the signal based on the FDD method in combination with other limitation set forth in the claims.

Conclusion

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703)305-3988, (for formal communications intended for entry)

Or:

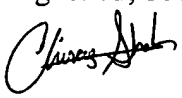
(703)305-3988 (for informal or draft communications, please label "Proposed" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G. Shah whose telephone number is 571-272-3144. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs
August 12, 2005



Chirag Shah